

## FORENSIC DNA DATABASE A Mauritian Perspective

**Sean R. Sohun**

*BSc (Hons) MSc MFSSoc MSB (UK)*

**Forensic Science Laboratory**



### DNA Profiling as a Major Investigative Tool

- Using DNA to trace people who are suspected of committing a crime is one of the biggest advances in tackling crime since fingerprinting.
- When DNA profiling is used wisely it can bring major benefits to society by helping to convict serious criminals including murderers and rapists.



### \* Concerns about police use of DNA \* Our right to privacy

- Concerns arise, however, when tissue samples, genetic information and personal data are stored indefinitely on a DNA database.
- There are fears that this information may be misused in ways that threaten our individual rights as well as those of our families.
- We must be confident that the police and the Government use DNA in a way that respects our fundamental right to privacy and protects our civil liberties.



### What is the DNA Database?

- The DNA Database is a police intelligence database that uses DNA to identify criminal suspects and to find links between different crimes.
- It was set up by the Forensic Science Laboratory (FSL).
- The database relies on the fact that DNA can be obtained from any sample of human tissue left at the scene of a crime.
- This is not just limited to violent crimes where the offender leaves a sample of blood or semen; the technology is now so sensitive that genetic information can be extracted from minute samples such as a fingerprint left on a door handle, or the saliva left on a cup or a cigarette.



### What is the DNA Database?

- The extended use of the technology now means that the database contains information from a wide range of crimes. Data from every new crime scene is routinely analysed to see if it matches a known individual on the database or any other scene of crime sample.
- **This not only helps to identify suspects, but can also help prove that a person is innocent.**



### Using DNA to identify individuals

- DNA (deoxyribonucleic acid) is found in every cell in the body. It is passed on from one generation to the next. Half our DNA is inherited from our mother and half from our father.
- Except for identical twins, every single person's DNA is unique. DNA can therefore be used to try to identify an individual in a similar way to a fingerprint.
- However, DNA is very different from other types of forensic data because it has the potential to reveal a lot more information about a person.

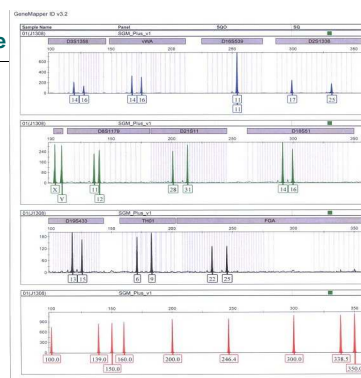


### Using DNA to identify individuals

- Unlike a fingerprint, DNA can:
  - potentially provide some hints about what a person looks like;
  - potentially indicate whether a person is at *risk* of developing an illness in the future or has a rare genetic condition;
  - reveal who a person is related to – if your DNA is held on the NDNAD it could be used to
  - trace your brothers, sisters, parents or children. Giving the police access to DNA samples therefore provides them with a lot more information than a fingerprint does, potentially including personal information about health and relationships.



### DNA Profile



### How the police use DNA

If the police obtain a DNA sample from a crime scene there are several ways they can use this information to find out who it came from:

- If there are already one or more known suspects for the crime the police can take DNA samples from all of them to see if they match the scene of crime (SOC) sample.
- The police can compare the DNA obtained from the crime scene with information on the database. If they find a match, the database will give them details about the person they are trying to find.



### Privacy as a right

- Privacy is a fundamental human right.
- In a free and democratic society, respect for privacy sets an essential limit on the power of both the state and private organisations to intrude into people's lives.
- The importance of protecting privacy is recognised by many international and national treaties including the Universal Declaration of Human Rights and the European Convention on Human Rights, which has been adopted into UK law.



### Privacy as a right

- The collection and storage of personal and genetic information by the police is viewed as a threat to our 'information privacy'.
- Human genetic data is widely recognised to have special status because of its ability to reveal private information about a person's health and family relationships.
- It is therefore argued that all DNA databases, including those held by the police, deserve special measures of protection.



### Privacy as a right

- There is also a more general concern that the other personal data on the database could support an increase in population surveillance, taking us closer towards an oppressive 'police state'.
- These fears are not unfounded. Within living memory, both fascist and communist governments in Europe have used identity papers and other personal records as a means of oppressing different populations.



### Balancing the interests of the individual and the state

- When someone is suspected or convicted of a crime, their rights are restricted in ways that depend on the seriousness of the offence.
- Before someone is convicted, there are strict limits as to how far their rights can be removed. These limits are designed to allow the police to do their job without giving them so much power that they can act in an arbitrary or unjust way.
- If the person is subsequently acquitted, they can then expect to be treated like any other citizen.
- This prevents false accusations from seriously damaging people's lives. If the person is subsequently convicted of a serious offence, they can then expect to be sent to prison and to lose some of their rights to freedom and privacy.



### Balancing the interests of the individual and the state

- It is not clear that the police use of DNA databases represents a 'fair and just' restriction of our right to privacy. The database contains information about people convicted of a wide range of offences; people arrested but never charged; people who have been acquitted; and people who have given their samples voluntarily. They all face the same threats to their rights.
- The biggest concern is that the police or Government could use 'the pursuit of criminal justice' to defend any use of people's personal or genetic information without their knowledge or consent.
- There is a danger that the balance of interests between the individual and the state may end up going too far in one direction.



### Are our Human Rights and Civil Liberties being Adequately Protected?

- This question is best answered by reviewing the legislation and regulations that relate to the following key issues:
  - Whose profiles should be added to the DNA Database?
  - When should samples be destroyed?
  - How should sensitive genetic information be protected?
  - Who decides how the DNA Database should be used?



### What Information is Stored on the Database? How is this Information Obtained?

- The DNA Database contains genetic information in the form of DNA profiles from both potential suspects and different crime scenes. It also contains more routine information about people, for example their name and sex.
- A barcode reference number also allows information on the database to be linked with the corresponding DNA sample, which is kept frozen in storage.
- Police forces supply the DNA samples used to derive the DNA profiles on the database, but individual police officers do not access the database. The Forensic Science Laboratory (FSL) owns and manages the database for the Mauritius Police Force and supplies the police with information about matches between DNA profiles.



### What Information is Stored on the Database? How is this Information Obtained?

- Each control sample supplied to the FSL by the police contains the following information:
  - the unique barcode reference number
  - the person's name
  - their date of birth
  - their NIC number
  - their CRO number
  - subject status
  - their ethnic origin
  - their gender
  - information about the police force that collected the sample
  - when the sample was taken and by whom



### Who owns the data and the samples?

The data and the samples held in storage are the property of the Mauritius Police Force that originally collected the sample and sent it to be analysed.

The FSL owns only the software and IT used to interpret the DNA profiles. It effectively provides a service for the police force.



### What Laws Govern the Use of the DNA Database? What are the Limits on Police Powers?

- The DNA Identification Act 2009 determines how the police can use the DNA Database.
- It sets the rules as to when a sample can be taken, whose profiles can be added to the database and when the data and the sample must be destroyed.
- The National laws governing the use of these databases vary a great deal, particularly in relation to whose profiles are added to the database and for how long the genetic information and samples are stored.



### What Laws Govern the Use of the DNA Database? What are the Limits on Police Powers?

- In terms of Protection of Information:
  - **DNA Identification Act 2009**  
Section 13: Protection of Information
  - **Data Protection Act 2004**
  - **DNA Identification Act 2009**  
**Section 19: Exemptions**  
Notwithstanding any other provision of this Act, the Data Protection Act shall not apply to any DNA data matching carried out under this Act.



### Who is added to the forensic DNA database?

- Some countries include only DNA profiles from people convicted of specific types of crime or people expected to serve a particular length of sentence. Some require a court order, while for others data entry is automatic.
- Sweden: profiles are added if the offender is expected to spend more than two years in prison.
- Norway: profiles are added from people convicted of a serious crime, but this requires a court order.



### Who is added to the forensic DNA database?

- Germany: profiles are added from people convicted of specific offences based on an evaluation of whether the person is likely to re-offend. A court order is also required.
- Netherlands: profiles are added only if the DNA evidence has been crucial to the conviction



### Who is added to the forensic DNA database?

#### **DNA Identification Act 2009** **Section 3: Request for DNA sample**

- (1) A police officer not below the rank of Superintendent of Police may, where he has reasonable ground to believe that a person is or may be connected to or associated with a serious offence, request a DNA sample from that person for the purpose of forensic analysis.
- (2) Where the person referred to in subsection (1) is a child or an incapable person, the police officer shall obtain the written authorisation of his parent.



### Who is added to the forensic DNA database?

#### **DNA Identification Act 2009** **Section 3: Request for DNA sample**

- (3) Before determining whether to make a request under subsection (1), the police officer shall have regard to –
  - (a) the nature of the offence;
  - (b) the degree of the person's alleged involvement or participation in the offence; and
  - (c) the existence of a less intrusive but reasonably practical way of obtaining evidence to confirm or disprove the person's alleged involvement or participation in the commission of the offence.



### Who is added to the forensic DNA database?

#### DNA Identification Act 2009

##### Section 3: Request for DNA sample

“serious offence” means –

(a) an offence punishable by a term of imprisonment or penal servitude but does not include a contravention or an offence which is punishable by a fine only; or

(b) such offence, punishable as specified in paragraph (a), as may be prescribed.



### Who is added to the forensic DNA database?

#### DNA Identification Act 2009

##### Section 4: Request for DNA samples from convicted persons

(1) The Commissioner of Police may require a convicted person to submit DNA samples for the purposes of forensic analysis.

(2) Any person who fails to submit a DNA sample, when so required under subsection (1), shall commit an offence.

(3) For the purposes of this section, a “convicted person” means a person who is convicted of a serious offence or has been at any time before the coming into force of this Act convicted of such an offence.



### When are DNA profiles removed from the forensic DNA database?

- Most countries remove the DNA profiles of convicted offenders after a period of 5 to 20 years. Only England and Wales, Austria, Finland and Norway retain these profiles indefinitely.

#### DNA Identification Act 2009

##### Section 10: DNA Data Records

(1) The Director shall keep DNA Data Records consisting of an index of DNA Profiles derived from DNA samples submitted to the FSL for forensic analysis and ensure that those data are securely stored and remain confidential.



### When are DNA profiles removed from the forensic DNA database?

2) Where a person whose DNA sample has been taken –

(a) is convicted of an offence; or

(b) is not convicted of an offence but gives his written consent to, the DNA data derived from the forensic analysis of his DNA sample may be kept as part of the DNA Data Records.

(3) Where a person who is not convicted for an offence does not give his written consent pursuant to subsection (2), the DNA data derived from the forensic analysis of his DNA sample may be kept as part of the DNA Data Records where-

(a) he has previously been convicted of an offence; or

(b) he has since been charged with having committed another offence.



### When are DNA profiles removed from the forensic DNA database?

(4) Subject to subsection (3), where a person who is not convicted for an offence does not give his consent pursuant to subsection (2), the DNA data derived from forensic analysis of his DNA sample may be kept as part of the DNA Data Records for a period not exceeding 5 years as from the date of the acquittal, stay of proceedings or decision not to prosecute, as appropriate, unless that person requests the Director in writing, after his acquittal, the stay of proceedings or decision not to prosecute him, as appropriate, to erase his data from the DNA data records, and the Director shall cause the data to be erased within a period of one year from the receipt of the request.



### When are DNA profiles removed from the forensic DNA database?

(5) Where a person has consented to give his DNA sample under this Act, that consent may be revoked by giving written notice to the Director and the Director shall cause the DNA sample to be destroyed and the resulting profile to be erased from the DNA Data Records within a period of one year from the date of receipt of the revocation.



### When are tissue samples destroyed?

- A number of countries destroy the tissue samples once the DNA analysis has been completed, for example Belgium, Germany, the Netherlands and Norway. Other countries, including Austria, England and Wales, Denmark, Finland, Hungary, Slovenia and Switzerland, retain duplicate samples in storage.

#### DNA Identification Act 2009

##### Section 9: Taking, storage, preservation and destruction of DNA sample

- (1) Every DNA sample shall be taken by a qualified person and stored and preserved in accordance with such procedure and guidelines as may be laid down by the FSL.



### When are tissue samples destroyed?

- (2) Subject to subsections (3) and (4) and section 10(5), a DNA sample shall be destroyed by the FSL as soon as it has fulfilled the purpose for which it was taken or after the final disposal of any proceedings in relation to which the sample was taken, whichever occurs later.

- (3) (a) Subject to paragraph (b), a DNA sample may be kept for such reasonable time as may be appropriate for the purpose of research or the constitution of its DNA Data Records or DNA Population Statistical Database.

- (b) No research shall be undertaken pursuant to paragraph (a) without the approval of the Minister.



### When are tissue samples destroyed?

- (4) A Court may, where it is satisfied that a DNA sample may reasonably be required in an investigation or a prosecution of a person for an offence, order that the DNA sample shall not be destroyed during such period as the Court considers appropriate.



### When are tissue samples destroyed?

#### DNA Identification Act 2009

##### Section 11: Destruction of DNA sample and erasure of DNA profile

Notwithstanding any provision of this Act, the Supreme Court may order the destruction of a DNA sample or erasure of a DNA profile from the DNA Data Records where it has been established, by the person from whom the DNA sample has been taken, that the sample or profile is being used illegally or for purposes not authorised under this Act.



### Can sample retention really be justified?

- DNA samples remain the property of the police force which collected them, but are stored by the laboratory which analysed them
- The FSL justifies the retention of DNA samples on the basis that they could be used to:
  - upgrade DNA profiles if the technology advances;
  - investigate any possible errors;
  - provide additional evidence when it is not possible to obtain another sample from the suspect.



### Questions ?

